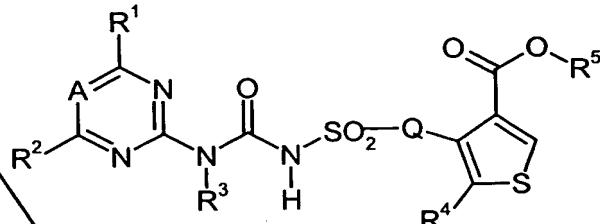


Patent Claims

Amen.
A1

1 Compounds of the general formula (I)



(I)

5

in which

10

A represents nitrogen or a CH grouping,

Q represents a single bond or represents NH,

15

R¹ represents hydrogen, halogen or in each case optionally substituted alkyl, alkoxy, alkylthio, alkylamino, dialkylamino, aryloxy or heterocyclyoxy,

20

R² represents hydrogen, halogen or in each case optionally substituted alkyl, alkoxy, alkylthio, alkylamino, dialkylamino, aryloxy or heterocyclyoxy,

25

R³ represents hydrogen or optionally substituted alkyl,R⁴ represents halogen or optionally substituted alkyl and – if Q represents NH – also represents hydrogen, and

25

R⁵ represents hydrogen or in each case optionally substituted alkyl, alkenyl, alkinyl, cycloalkyl, cycloalkylalkyl or heterocyclyl.

*contd.**a¹*

and salts of compounds of the formula (I).

2. Compounds according to Claim 1, characterized in that

- 5 R¹ represents hydrogen, represents halogen, represents in each case optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl, alkoxy, alkylthio, alkylamino or dialkylamino having in each case 1 to 4 carbon atoms in the alkyl groups, or represents in each case optionally cyano-, halogen-, C₁-C₄-alkyl- or C₁-C₄-alkoxy-substituted phenoxy, oxetanyloxy, furyloxy or tetrahydrofuryloxy,
- 10 R² represents hydrogen, represents halogen, represents in each case optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl, alkoxy, alkylthio, alkylamino or dialkylamino having in each case 1 to 4 carbon atoms in the alkyl groups, or represents in each case optionally cyano-, halogen-, C₁-C₄-alkyl- or C₁-C₄-alkoxy-substituted phenoxy, oxetanyloxy, furyloxy or tetrahydrofuryloxy,
- 15 R³ represents hydrogen or represents optionally C₁-C₄-alkoxy-, C₁-C₄-alkyl-carbonyl- or C₁-C₄-alkoxy-carbonyl-substituted alkyl having 1 to 4 carbon atoms,
- 20 R⁴ represents optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl having 1 to 6 carbon atoms and – if Q represents NH – also represents hydrogen, and
- 25 R⁵ represents hydrogen, represents optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl having 1 to 6 carbon atoms, represents in each case optionally halogen-substituted alkenyl or alkinyl having in each case 2 to 6 carbon atoms, represents in each case optionally cyano-, halogen- or C₁-C₄-alkyl-substituted cycloalkyl or cycloalkyl-

*contd.**d1*

alkyl having in each case 3 to 6 carbon atoms in the cycloalkyl groups and optionally 1 to 4 carbon atoms in the alkyl moiety, or represents in each case optionally cyano-, halogen-, C₁-C₄-alkyl- or C₁-C₄-alkoxy-substituted oxetanyl, furyl or tetrahydrofuryl.

5

3. Compounds according to Claim 1, characterized in that

10

R¹ represents hydrogen, fluorine, chlorine, bromine, iodine, or represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylamino, ethylamino, n- or i-propylamino, dimethylamino or diethylamino,

15

R² represents fluorine, chlorine, bromine, or represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylamino, ethylamino, n- or i-propylamino, dimethylamino or diethylamino,

20

R³ represents hydrogen or represents in each case optionally methoxy-, ethoxy-, n- or i-propoxy-, acetyl-, propionyl-, n- or i-butyroyl-, methoxycarbonyl-, ethoxycarbonyl-, n- or i-propoxycarbonyl-substituted methyl or ethyl,

25

R⁴ represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, and

30

R⁵ represents hydrogen, represents in each case optionally cyano-, fluorine-, chlorine-, methoxy-, ethoxy-, n- or i-propoxy-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, represents in each

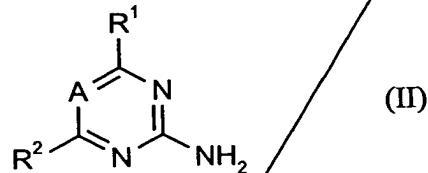
- contd.*
a¹
- case optionally fluorine-, chlorine- or bromine-substituted propenyl, butenyl, propenyl or butenyl, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-substituted cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl or cyclohexylmethyl.
- 5 4. Compounds according to Claim 1, characterized in that
- 10 R¹ represents hydrogen, fluorine, chlorine, bromine, represents in each case optionally fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, methoxy, ethoxy, methylthio, ethylthio, methylamino, ethylamino, or represents dimethylamino,
- 15 R² represents fluorine, chlorine, bromine, represents in each case optionally fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, methoxy, ethoxy, methylthio, ethylthio, methylamino or ethylamino, or represents dimethylamino,
- 20 R³ represents hydrogen or methyl,
- 25 R⁴ represents in each case optionally fluorine- or chlorine-substituted methyl, ethyl, n- or i-propyl, and
- 30 R⁵ represents in each case optionally fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, or represents in each case optionally fluorine- or chlorine-substituted propenyl or propenyl.
5. Sodium, potassium, magnesium, calcium, ammonium, C₁-C₄-alkyl-ammonium, di-(C₁-C₄-alkyl)-ammonium, tri-(C₁-C₄-alkyl)-ammonium, tetra-(C₁-C₄-alkyl)-ammonium, tri-(C₁-C₄-alkyl)-sulphonium, C₅- or C₆-cyclo-

contd.
a¹

alkyl-ammonium and di-(C₁-C₂-alkyl)-benzyl-ammonium salts of compounds according to any of claims 1 to 4.

6. Process for preparing compounds according to any of Claims 1 to 5,
5 characterized in that

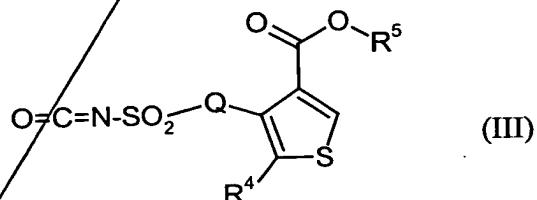
(a) aminoazines of the general formula (II)



10 in which

A, R¹ and R² are each as defined in any of Claims 1 to 4

15 are reacted with thienyl(amino)sulphonyl isocyanates of the general formula (III)



in which

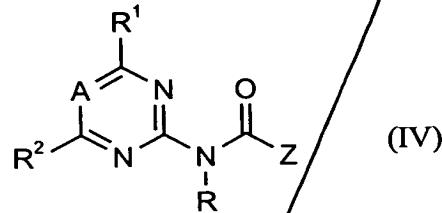
20 Q, R⁴ and R⁵ are each as defined in any of Claims 1 to 4,

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

25 or that

contd.
A¹

(b) substituted aminoazines of the general formula (IV)



5

in which

A, R¹ and R² are each as defined in any of Claims 1 to 4,

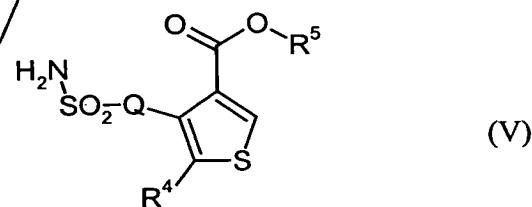
10

Z represents halogen, alkoxy or aryloxy and

R has the meaning given for R³ in any of claims 1 to 4 or represents the grouping -C(O)-Z,

15

are reacted with thiophene derivatives of the general formula (V)



20

in which

Q, R⁴ and R⁵ are each as defined in any of Claims 1 to 4,

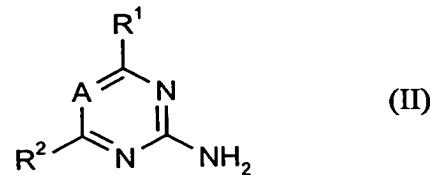
if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

or that

contd.

a¹

(c) aminoazines of the general formula (II)



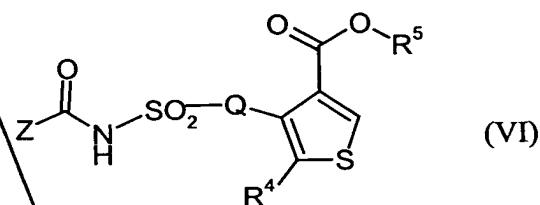
5

in which

A, R¹ and R² are each as defined in any of Claims 1 to 4,

10

are reacted with thiophene derivatives of the general formula (VI)



15

in which

Q, R⁴ and R⁵ are each as defined in any of Claims 1 to 4 and

20

Z represents halogen, alkoxy or aryloxy,

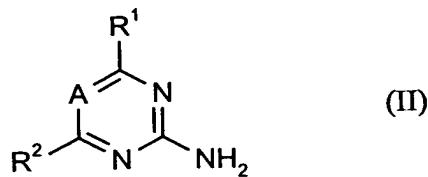
if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

or that

(d) aminoazines of the general formula (II)

- 50 -

contd.
a¹

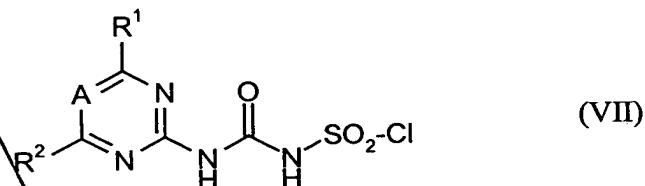


in which

A, R¹ and R² are each as defined in any of Claims 1 to 4,

5

are reacted with chlorosulphonyl isocyanate, if appropriate in the presence of a diluent, and the resulting chlorosulphonylaminocarbonylamino-azines of the general formula (VII)



10

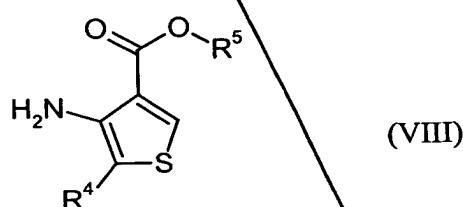
in which

A, R¹ and R² are each as defined in any of Claims 1 to 4

15

are – after intermediate isolation or “in situ” –

reacted with substituted aminothiophenes of the general formula (VIII)



20

in which

R⁴ and R⁵ are each as defined in any of Claims 1 to 4,

control.

a¹

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

5

and the compounds of the formula (I) obtained by process (a), (b), (c) or (d) are, if appropriate, converted by customary methods into salts.

10

7. Method for controlling undesirable vegetation, characterized in that at least one compound according to any of Claims 1 to 5 is allowed to act on undesirable plants and/or their habitat.

a

8. Use of at least one compound according to any of Claims 1 to 5 for controlling undesirable plants.

15

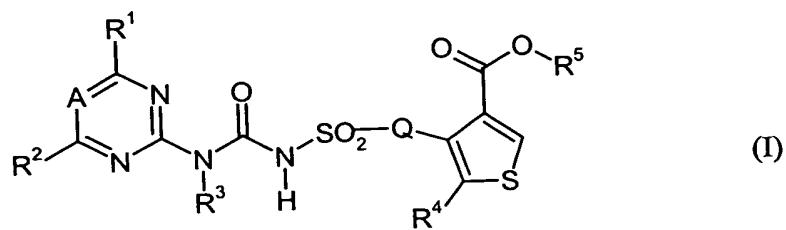
9. Herbicidal composition, characterized in that it comprises a compound according to any of Claims 1 to 5 and customary extenders and/or surfactants.

Amn.
a²

Substituted thienyl(amino)sulphonylureas

A b s t r a c t

The invention relates to novel substituted thienyl(amino)sulphonylureas of the general formula (I)



in which A, Q, R¹, R², R³, R⁴ and R⁵ are each as defined in the description,

to processes for their preparation and to their use as herbicides.